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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,957	01/07/2002	Steven Teig	SPLX.P0044	5414
48947	7590	01/13/2005	EXAMINER	
STATTLER, JOHANSEN, AND ADELI LLP 1875 CENTURY PARK EAST SUITE 1050 CENTURY CITY, CA 90067			TAT, BINH C	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/041,957	Applicant(s) TEIG ET AL.	
	Examiner Binh C. Tat	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/02/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to application 10/041957 filed on 02/07/02.

Claims 27-47 remain pending in the application.

Response to Arguments

2. Applicant's arguments with respect to claims 27-47 have been considered but are persuasive in view of the new ground's of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Das et al., "Channel Routing in Manhattan-Diagonal Model," IEEE, 1995, pp 43-48.

3. As to claims 27, 46, and 47 Das et al. a method teach of pre-computing routes for nets, the method comprising: a) prior to performing a routing operation, defining a set of partitioning lines for partitioning (see fig 1), during the routing operation, a region of an integrated circuit ("IC") layout into a plurality of sub-regions (see fig 1 and pp 43 Das defined the grid structure in manhattan-diagonal model); b) for a set of potential sub-regions, identifying a set of at least two routes that traverse the potential set of sub-regions, wherein at least one of the routes has at least one diagonal edge (see fig 2-12 pp 44-47); storing the identified routes, wherein said stored routes are for use during the routing operation (see fig 4-12 pp 44-47 and table 1-3) .

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4. As to claim 28 Das et al. teach wherein a plurality of paths exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the paths are diagonal paths, wherein at least one of the routes traverses some of the diagonal (see fig 2-12 pp 44-47).
5. As to claims 29 Das et al. teach wherein identifying the routes comprises identifying the paths between the sub-regions used by each route (see fig 2-5 pp 44).
6. As to claim 30, Das et al. teach wherein a plurality of the paths are Manhattan paths, wherein at least one of the routes traverses some of the Manhattan paths (see fig 25 pp 43-44).
7. As to claim 31-33 Das et al. wherein a plurality of edges exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the edges between the sub-regions are diagonal edges, wherein at least one of the routes intersects at least one of the diagonal edges (see fig 2-5 pp 43-44).
8. As to claim 34-36 Das et al. further comprising: a) for each particular set of potential sub-regions from a group of potential-sub-region sets and wherein the group of sets includes all possible sets of sub-regions including sets with zero or one sub-region, wherein the identified sets of routes for sets of sub-regions with zero or one sub-region are empty, identifying a set of routes that traverse the particular set of potential sub-regions, wherein some of the routes have diagonal edges (see fig 2-12 pp 44-47); and b) storing the identified routes (see fig 4-12 pp 44-47 and table 1-3).
9. As to claim 37 and 42 Das et al. teach for a roister that uses a set of partitioning lines to partition an integrated circuit ("IC") layout region into a plurality of sub-regions, wherein a plurality of routing paths exist between the sub-regions, a method of pre-computing routes for

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connecting said sub-regions, the method comprising: for each particular combination of two or more sub-regions, identifying at least one route for connecting the particular combination of said sub-regions, said identifying performed before a routing operation (see fig 2-12 pp 44-47); identifying the routing paths used by each identified route, wherein some of the identified routing paths are diagonal; and storing the identified routing paths for each identified routes in a storage structure wherein said stored routing paths are for use during the routing operation (see fig 4-12 pp 44-47 and table 1-3).

10. As to claim 38 , 41 and 43 Das et al. teach wherein some of the routing paths are horizontal (see pp 43 introduction).

11. As to claim 39 and 44 Das et al. teach wherein some of the routing paths are Manhattan (see fig 1-5 pp 43-44).

12. As to claim 40 and 45 Das et al. teach wherein the Manhattan routing paths are defined with respect to a first grid, and wherein the diagonal routing paths are defined with respect to a second grid (see fig 1-5 pp 43-44).

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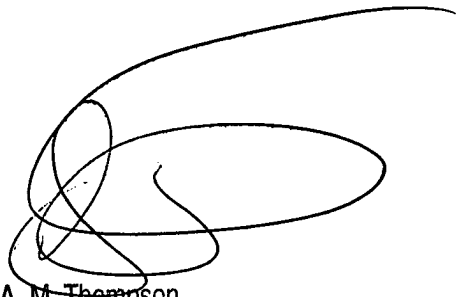
Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh C. Tat whose telephone number is (703) 305-4855. The examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Binh Tat
Art Unit 2825
January 8, 2005



A. M. Thompson
Primary Examiner
Technology Center 2800